Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A method for determining the presence or absence of a cancer in a patient, the method comprising the steps of:

(a) determining the level of Pygopus gene expression in a biological sample obtained from a patient, and

(b) comparing the level of Pygopus gene expression in the biological sample to a predetermined cut-off value, to determine whether Pygopus expression is higher in the biological sample;

therefrom determining the presence or absence of cancer in the patient.

2. (Currently amended) A method for monitoring the progression of a cancer in a patient, the method comprising the steps of:

(a) ~~determining the level of Pygopus gene expression in a biological sample obtained from a patient, and~~

~~(b) comparing the level of Pygopus gene expression in the biological sample to a predetermined cut-off value, to determine whether Pygopus expression is higher in the biological sample; and therefrom~~ determining the presence or absence of cancer in the patient according to the method of claim 1;

~~(c)~~ (b) repeating ~~steps (a) and (b)~~ step (a) using a biological sample obtained from the patient at a subsequent time; and

~~(d)~~ (c) comparing the level of Pygopus gene expression detected in step ~~(c)~~ (b) to the level of Pygopus gene expression detected in step ~~(b)~~ (a); and therefrom monitoring the progression of the cancer in the patient.

3. (Currently amended) The method according to claim 1 ~~or 2~~ wherein the predetermined cut-off value is the level of Pygopus gene expression in a normal biological sample.

4. (Currently amended) The method according to ~~any one of claims 1 to 3~~ claim 1 wherein the cancer is ovarian cancer, and the biological sample is a tissue biopsy containing epithelial ovarian cells.

5. (Cancelled)

6. (Currently amended) The method according to ~~any one of claims 1 to 5~~ claim 1 wherein the Pygopus gene is hPygo2 as shown in SEQ ID NO:1.

7. (Currently amended) The method according to ~~any one of claims 1 to 5~~ claim 1 wherein the Pygopus gene is hPygo1 as shown in SEQ ID NO:3.

8. (Currently amended) The method according to ~~any one of claims 1 to 7~~ claim 1 wherein the level of Pygopus gene expression is determined by the amount of Pygopus protein.

9. (Currently amended) The method according to ~~any one of claims 1 to 7~~ claim 1 wherein the level of Pygopus gene expression is determined by the amount of Pygopus mRNA.

10. (Currently amended) A kit for determining the presence or absence of a cancer in a patient according to the method of claim 1, the kit comprising a reagent capable of detecting Pygopus protein or mRNA in a biological sample obtained from the patient, and instructions for using the reagent to determine whether the level of Pygopus gene expression in the biological sample is higher compared to a predetermined cut-off value, and therefrom determining the presence or absence of cancer in the patient.

11 - 30. (Cancelled)

31. (Currently amended) A method for obtaining a compound which inhibits tumor cell proliferation, wherein the tumor cell express Pygopus, the method comprising:

~~(a) providing a short interfering RNA (siRNA) or siRNA-like molecule targeted to a Pygopus gene or to a portion of a Pygopus gene;~~

~~(b)~~ (a) delivering the ~~siRNA or siRNA-like molecule~~ oligonucleotide of claim 46 into epithelial ovarian carcinoma or breast cancer cells; and

~~(c)~~ (b) determining whether the delivered ~~siRNA or siRNA-like molecule~~ oligonucleotide inhibits proliferation of the cancer cells.

32 - 38. (Cancelled)

39. (Currently amended) A method for inhibiting tumor cell proliferation, the method comprising delivering to the tumor cell a proliferation-inhibiting amount of ~~a compound~~ the oligonucleotide of claim 46 which reduces expression of a Pygopus-encoding nucleic acid.

40. (Original) The method according to claim 39 wherein the tumor cell is an epithelial ovarian carcinoma cell or breast cancer cell.

41 – 45. (Cancelled)

46. (Currently amended) An ~~antisense~~ oligonucleotide which is an antisense oligonucleotide, a short interfering RNA (siRNA) or a siRNA-like molecule, targeted to hPygo2 (SEQ ID NO:1) in the region from nucleotide 437 to 1156 of SEQ ID NO:1, wherein said antisense oligonucleotide, siRNA or siRNA-like molecule specifically hybridizes with said region and reduces the expression of hPygo2.

47. (Currently amended) An ~~antisense~~ oligonucleotide which is an antisense oligonucleotide, a short interfering RNA (siRNA) or a siRNA-like molecule, targeted to hPygo1 (SEQ ID NO:3) in the region from nucleotide 253 to 1023 of SEQ ID NO:3, wherein said antisense oligonucleotide, siRNA or siRNA-like molecule specifically hybridizes with said region and reduces the expression of hPygo1.

48 – 49. (Cancelled)

50. (Currently amended) The ~~antisense~~ oligonucleotide according to claim 46 having the sequence selected from the group consisting of SEQ ID NOS:5-14.

51. (Currently amended) The ~~antisense~~ oligonucleotide according to claim 50 having the sequence of SEQ ID NO:9.

52. (Currently amended) The ~~siRNA or siRNA-like molecule~~ oligonucleotide according to claim ~~48~~ 46 having the sequence selected from the group consisting of SEQ ID NOS:15-19.

53. (Currently amended) The ~~siRNA or siRNA-like molecule~~ oligonucleotide according to claim 52 having the sequence of SEQ ID NO:15 or 18.

54. (New) A method for obtaining a compound which inhibits tumor cell proliferation, wherein the tumor cell express Pygopus, the method comprising:

(a) delivering the oligonucleotide of claim 47 into epithelial ovarian carcinoma or breast cancer cells; and

(b) determining whether the oligonucleotide inhibits proliferation of the cancer cells.

55. (New) A method for inhibiting tumor cell proliferation, the method comprising delivering to the tumor cell a proliferation-inhibiting amount of the oligonucleotide of claim 47 which reduces expression of a Pygopus-encoding nucleic acid.

56. (New) The method according to claim 55 wherein the tumor cell is an epithelial ovarian carcinoma cell or breast cancer cell.